

**Abstract**

This invention is directed toward improving the subjective voice quality of a mobile to mobile phone call having tandem vocoder processing by modifying the spectrum of the voice signal before it is processed by the second vocoder to compensate for digital distortion which is generated by the second vocoder. An adaptive filter can be used to modify the spectrum of the voice signal. With this invention, the voice quality of a call from a first mobile phone to a second mobile phone has a quality that is substantially similar to the voice quality of a call from a mobile phone to a desk phone.